	Application No.	Applicant(s)
Notice of Allowability	10/540,003	HAZART, JEROME
	Examiner	Art Unit	
	Tu T. Nguyen	2886	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308. .

1. ☒ This communication is responsive to *07/06/2007*.

2. ☒ The allowed claim(s) is/are *22-42*.

3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☒ All   b) ☐ Some*   c) ☐ None   of the:

       1. ☐ Certified copies of the priority documents have been received.

       2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

       3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

       1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of
    Paper No./Mail Date _____.

    Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO/SB/08),
    Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit
    of Biological Material

5. ☐ Notice of Informal Patent Application

6. ☐ Interview Summary (PTO-413),
    Paper No./Mail Date _____ .

7. ☐ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____.

REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance:

As per claim 22, the prior arts of record, taken alone or in combination, fail to

disclose or render obvious the steps of carrying out a set of reflectometry and/or

ellipsometry measurements over the interval A, the set of measurements leading to a

measured spectrum, and choosing methods for calculating associated with a nature of

the measurements and with a type of layer to be characterized; choosing m initial

values, belonging to the interval A, m being a whole number at least equal to 1, and

defining an interval B, when m is greater than 1, and as being the interval A when m

equals 1; choosing m complex initial values of a complex refraction index $n^* = n + jk$ for

the m points ranging from 1 to m; when m is not 1, choosing an interpolation law that

allows calculating the refraction index of the material over the interval B, from the points

(α_i, n_i) with $n_i = n(\alpha_i)$, i range from 1 to m, and when m equals 1, $n(\alpha)$ is taken equal to the

number $n_1(\alpha_1)$ over the entire interval B; choosing M variable parameters, M being less

than or equal to 2 m+1; choosing an error function that characterizes the difference

between a measured spectrum and a theoretical spectrum; using a minimizing error

function with M parameters, performing: a) by applying the interpolation law of (α_1, n_i)

over the interval B, deducing $n(\alpha)$, α belonging to B; b) by using $n(\alpha)$ and the thickness

of the layer, and methods for calculating spectrums, calculating a theoretical spectrum;

c) comparing the measured and the calculated spectrum by using the error function

and, if the error function is less than a predetermined value e, or is minimal, going to e),

otherwise going to d); d) making the M variable parameters vary so as to tend to the

minimum of the error function and returning to a); e) if the error function is less than e, then obtaining a set of M variable parameters, for which the error function is minimal and the refraction index is then taken equal to the last one obtained, and if the error function is greater or equal to e going to 8); 8) increasing the number m of initial values of the function α and returning to 2), which structurally arranged and functionally operated as claimed in claim 22.

As per claim 32, the prior arts of record, taken alone or in combination, fail to disclose or render obvious the steps of choosing M initial parameters, M being at least equal to m, an initial refraction index n_i for each initial wavelength λi, the initial wavelengths being chosen so as to determine via interpolation at least the refraction index for any wavelength within the interval [λmin, λmax], couples (λi , ni) being nodes; choosing reflectometry and ellipsometry methods of calculation; choosing an error function Er, representative of the difference between two spectrums Ψ1 and Ψ2, the spectrums Ψ1 and Ψ2 being calculated or measured over a number of points greater than the number m of nodes; using the m initial wavelengths, the M initial parameters, and the interpolation law, implementing an optimization process of: determining a theoretical spectrum, depending on the chosen methods of calculation, and on the index deduced via interpolation of its value at λi, i ranging from 1 to m, over the spectrum [λmin, λmax]; determining the error , between the measured spectrum and the theoretical spectrum; minimizing the error by varying the position of the values of the unknown indexes and/or the thickness of the layer and/or the values of the refraction

indexes with initial wavelengths, and obtaining a spectrum; adding other wavelengths to

the initial wavelengths $\lambda i \ldots \lambda m$, the added wavelengths constituting new nodes;

repeating the method by choosing a number m' of initial wavelengths, m' being greater

than m, and M' initial parameters, M' being greater than M, until the accuracy of each

spectrum thus best represented is equal to a predetermined accuracy, which structurally

arranged and functionally operated as claimed in claim 22.

Any comments considered necessary by applicant must be submitted no later

than the payment of the issue fee and, to avoid processing delays, should preferably

accompany the issue fee. Such submissions should be clearly labeled "Comments on

Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from

the examiner should be directed to Tu T. Nguyen whose telephone number is (571)

272-2424. The examiner can normally be reached on T-F 7:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Tarifur Chowdhury can be reached on (571) 272-2800 Ext. 86. The fax

phone number for the organization where this application or proceeding is assigned is

571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tu T. Nguyen
Primary Examiner
Art Unit 2886

07/20/2007.